

# THE INC

*Additional Details of  
Poor Armament : W  
Dumping : Anti-Flu*

Twenty-five thousand pounds of dive-bomber coming down at fifty degrees. The Ju 88 is a bomber redesigned to be a dive-bomber also.

being a heavy bomber for bomb-dropping from the level attitude.

The idea of using it as a dive-bomber apparently occurred after it was originally designed—it appeared early in 1938—for the diving brakes under the wings are not capable of retraction, but merely lie flat against the lower surface when not in use. If present in the original conception, it is undoubted that provision for their retraction would have been made. In the guise of a dive-bomber this machine is unique, for it is the only twin-engined example, and the largest, of this type of offensive weapon.

For dive-bombing it has external racks for four 250 kg. bombs, two under each wing, between fuselage and engine. In addition, for level bombing, it can carry 16 bombs, each of 50 kg., inside the fuselage. (The same space inside the fuselage, when cleared of

bomb racks, is available for the installation of a large square petrol tank which will be described later.) The total bomb load is, therefore, 1,800 kg. (3,960 lb.).

We are unaccustomed to thinking of big machines doing aerobatics, and, though a pull-out from a dive is not aerobatics, it is capable of imposing a more severe stress on the aeroplane than any other manoeuvre if done suddenly at high speed. So it might be thought it would be an insoluble problem to make a machine as big as this strong enough to stand up to the rigours of dive-bombing. But it is a question entirely of speed in the dive; if this is limited to a safe value, then the pull-out can be made without excessive structural loads being applied.

To keep the speed down it is necessary either to limit the angle of dive to something very flat or to provide liberal brakes. Keeping the angle of dive flat renders the machine ineffective as a dive-bomber, since the steeper the angle the greater is the accuracy. So the only possible way, that of making the brakes liberal in size, has been

adopted on the Ju 88.

The maximum angle of dive is not certain. One Ju 88 seen had only one diving line on the wind-screen, and this was at an inclination of 45 deg. But another one had lines at 40, 50, 60 and 70 deg. The accuracy of dive-bombing at an angle of 45 deg. cannot be very great. It is rather a half-and-half way of doing it, for it has not the

**T**HE description of the Junkers Ju 88 which was given in our issue of October 3 can now be amplified, and many additional features explained and illustrated. The machine which was inspected for the first description was a much-damaged and much-dismantled one, but we have now been privileged, by courtesy of the Ministry of Aircraft Production, to inspect another in a considerably better state of preservation, although completely unair-worthy—thanks to the Royal Air Force—and not likely ever to be otherwise.

In the time available since our first article it has been possible to study details which are inventive in character, and each worthy of attention. These are now revealed with drawings for the first time. But, despite the wealth of novel ideas, the Ju 88 does not impress one as an efficient military aeroplane. At best, it might perhaps be called a "near success," but in the grim business of aerial warfare, to miss success by a small margin is little better than being a mile off.

The Ju 88 A-1, the full type name of the aeroplane inspected, though it does not look so big, is about the same size and weight as our Whitley. The idea of a machine as big as this—its total loaded weight is 25,000 lb.—being used as a dive-bomber is one that would not have sprung readily to the mind a few years ago. But this is what the Ju 88 is, as well as

*This second article on the Junkers Ju 88 is the eighth of the series on "Enemy Aircraft," the others of which have been:*

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